

FIG. 1A

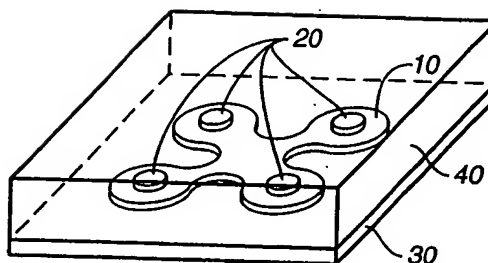


FIG. 1B

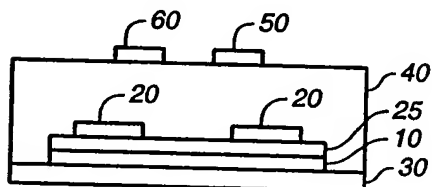


FIG. 1C

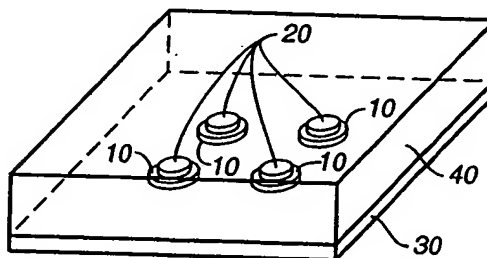


FIG. 1D

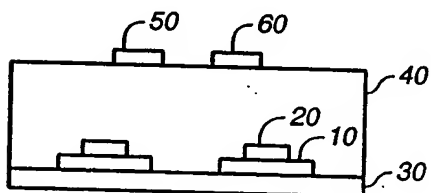


FIG. 1E

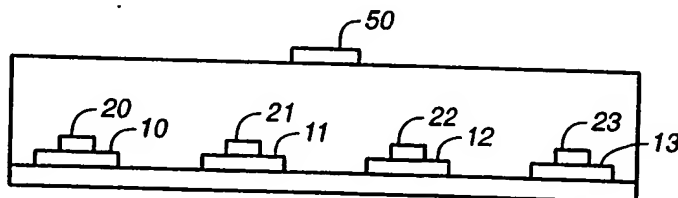


FIG. 1F

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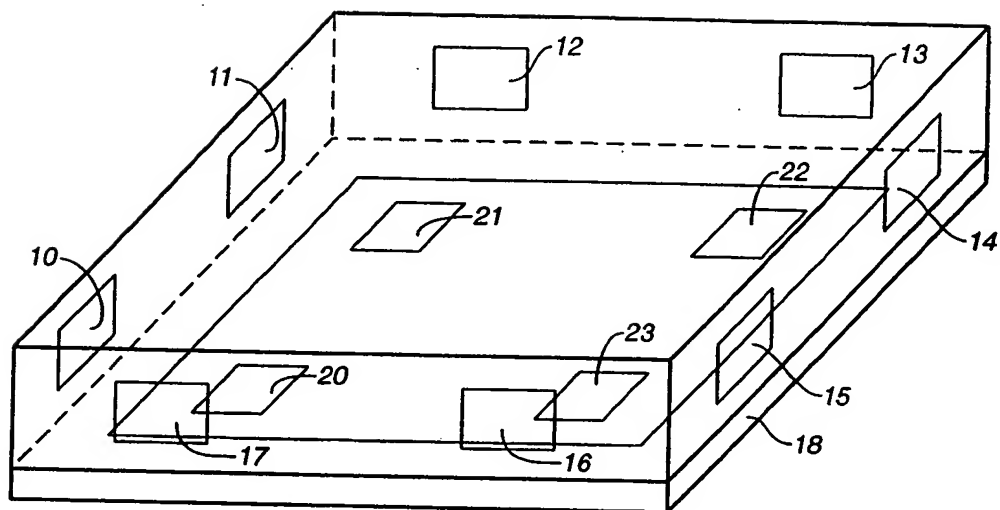


FIG. 2

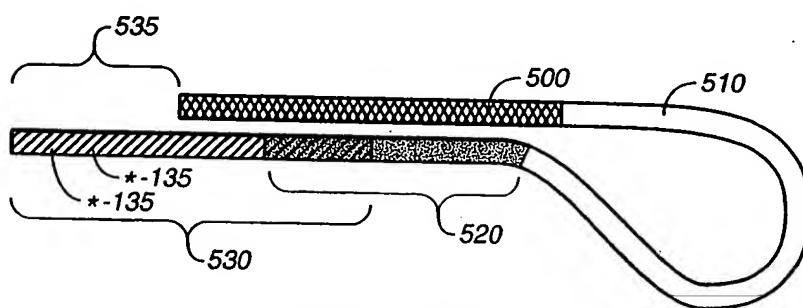


FIG. 12

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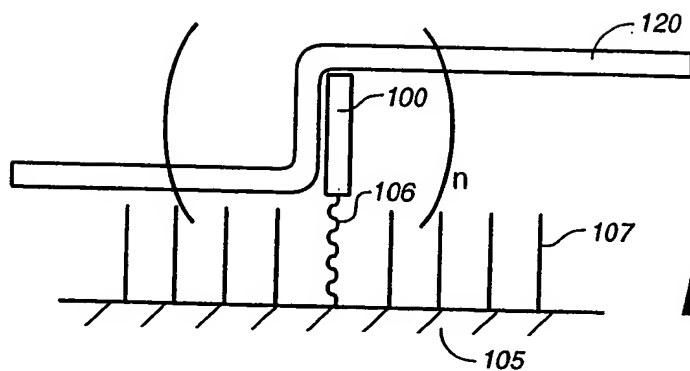


FIG. 3A

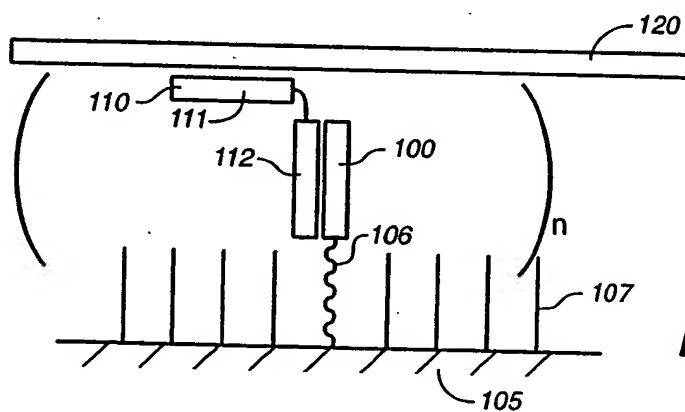


FIG. 3B

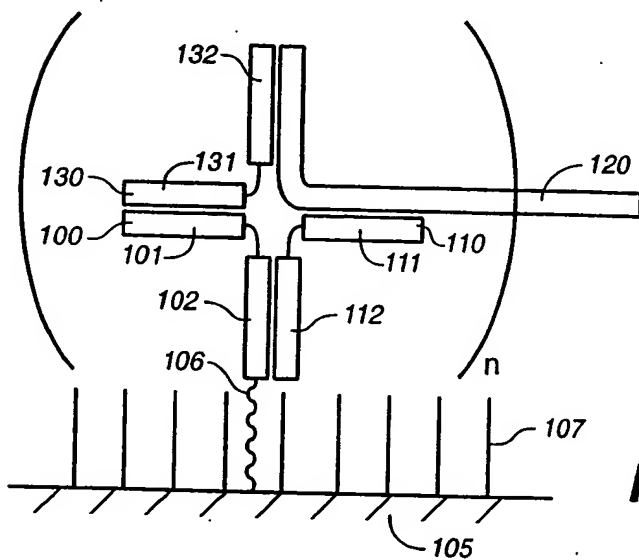


FIG. 3C

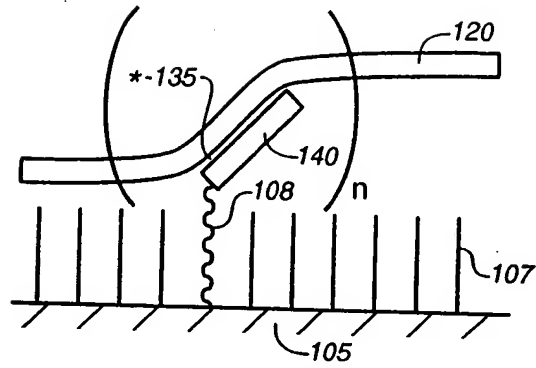


FIG. 4A

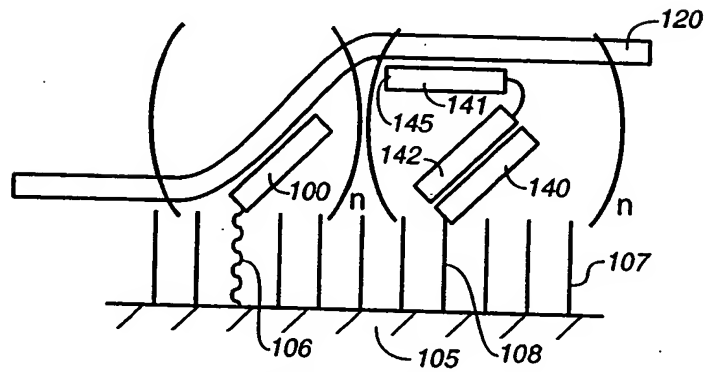


FIG. 4B

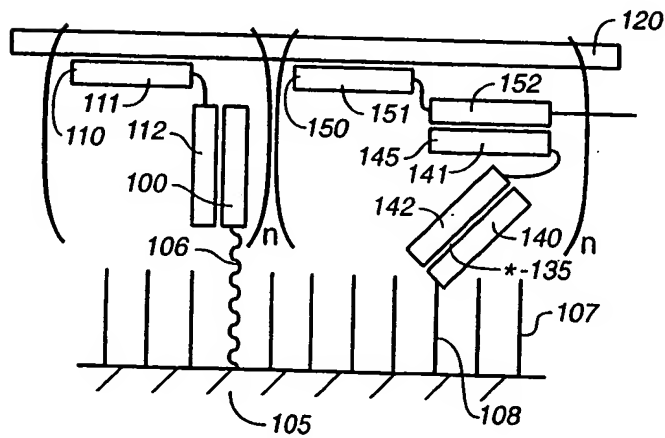


FIG. 4C

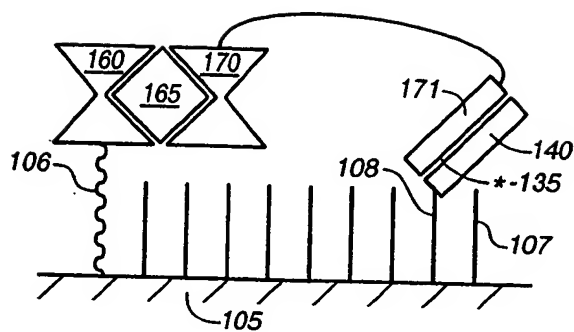


FIG. 4D

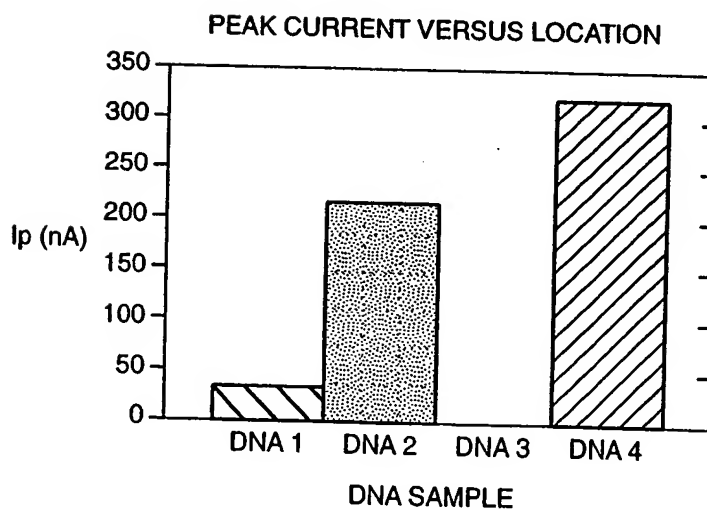


FIG. 14

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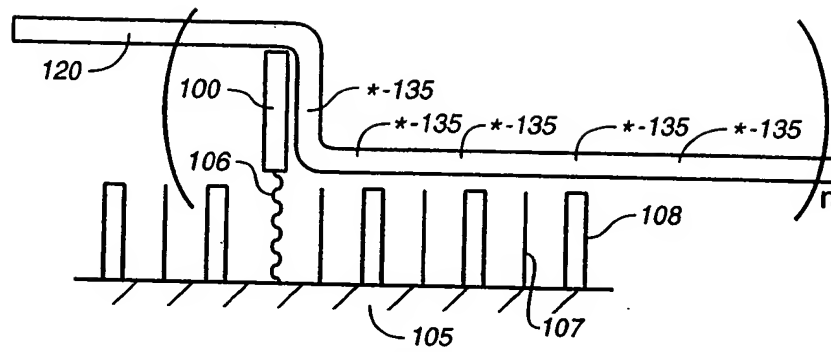


FIG. 5A

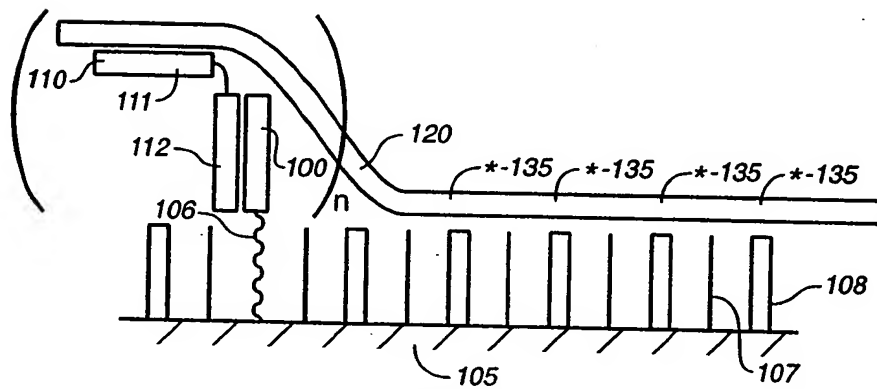


FIG. 5B

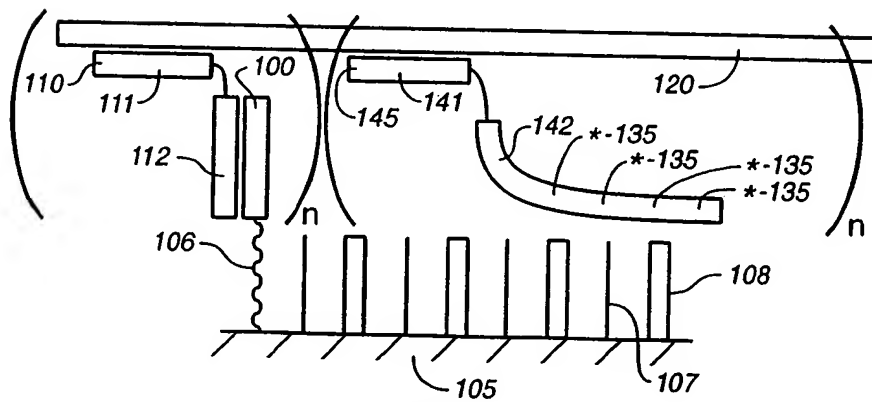
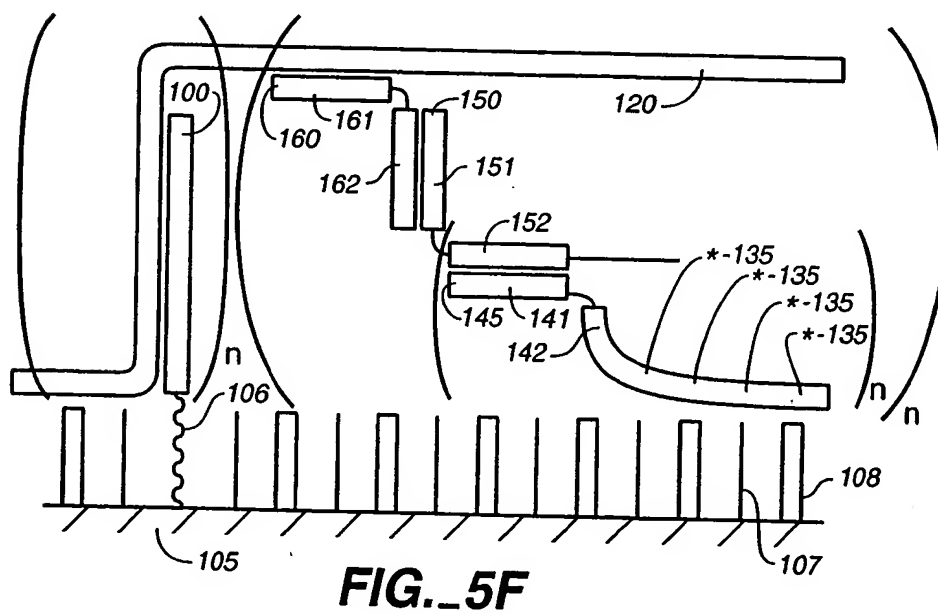
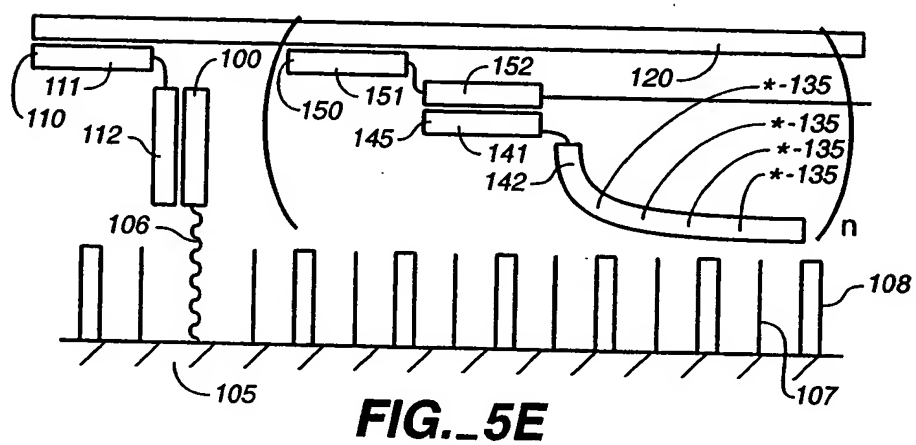
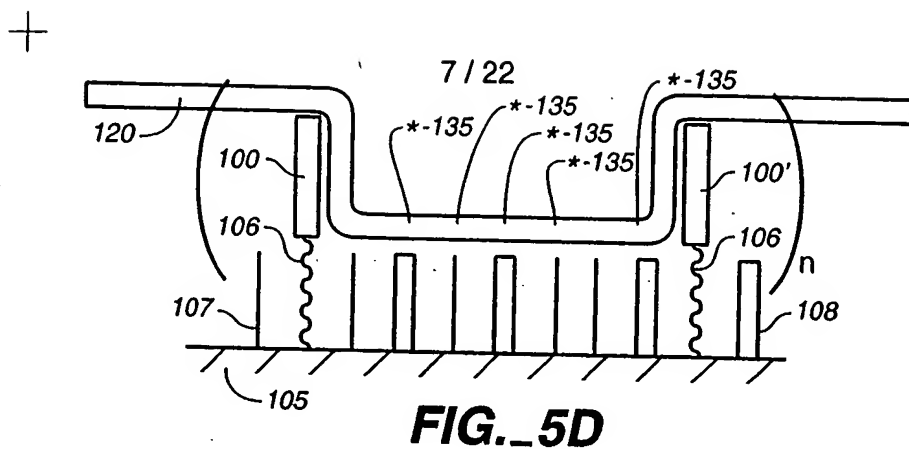


FIG. 5C



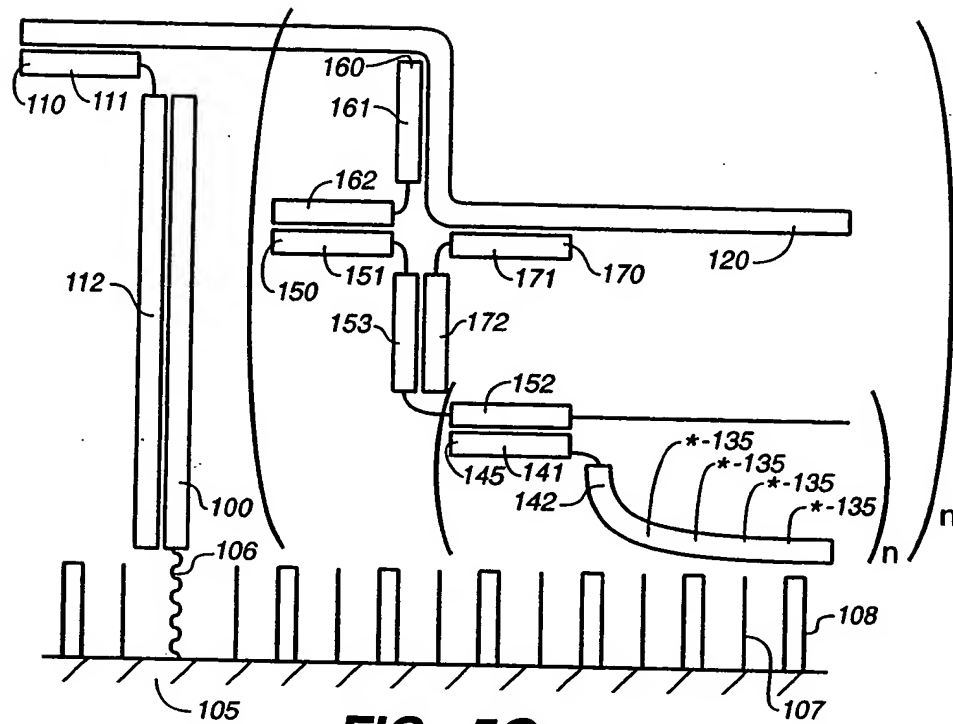


FIG._5G

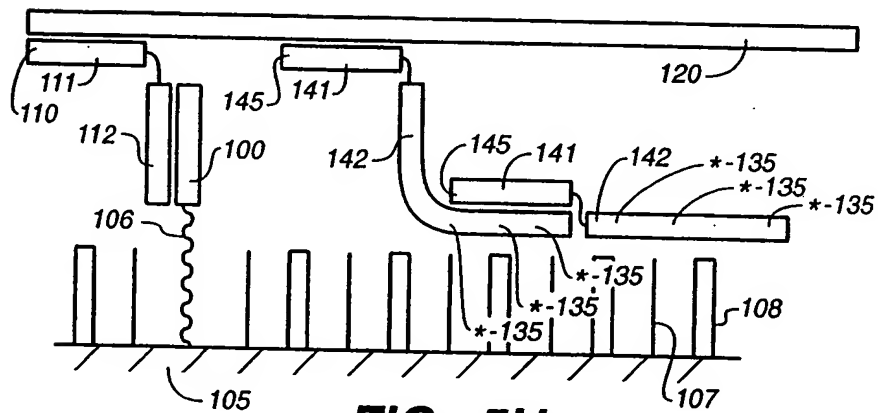


FIG. 5H

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FIG._6A

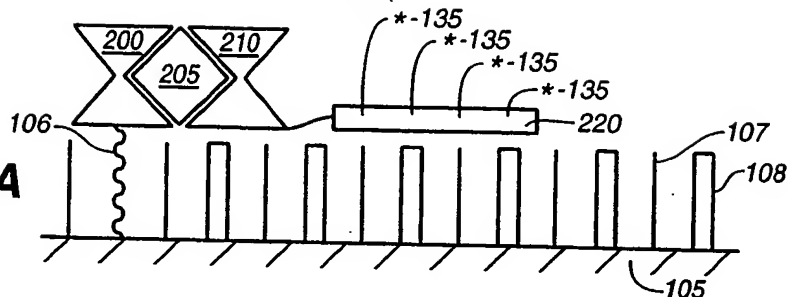


FIG._6B

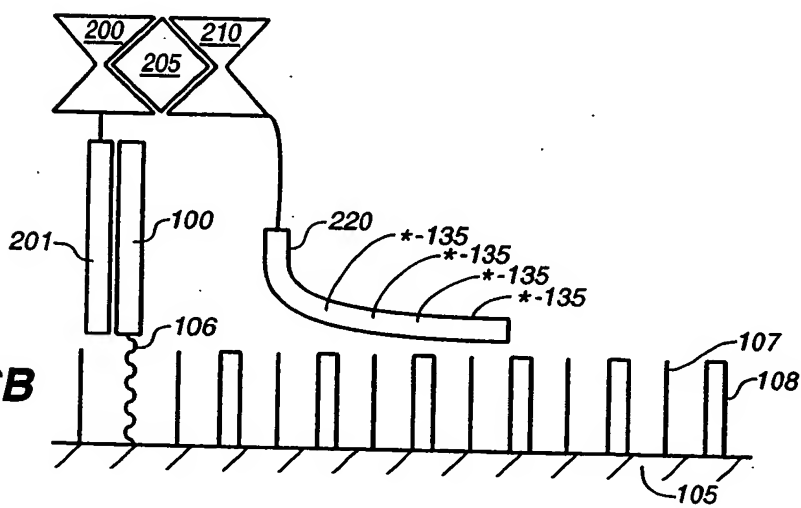


FIG._6C

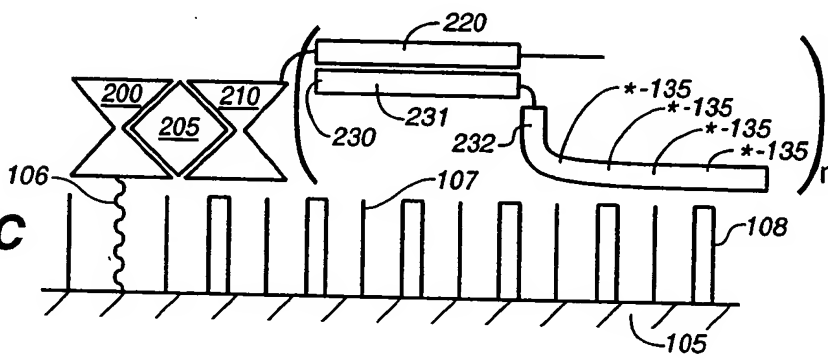
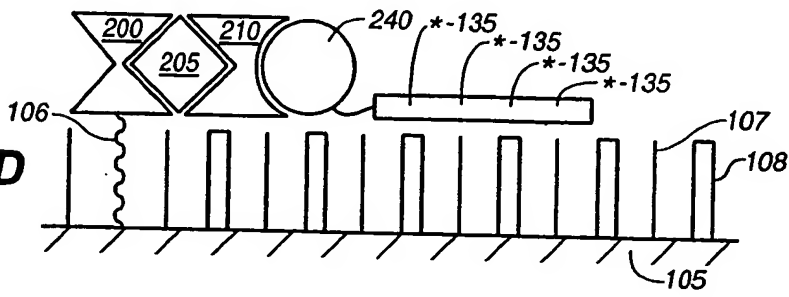


FIG._6D



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FIG._6E

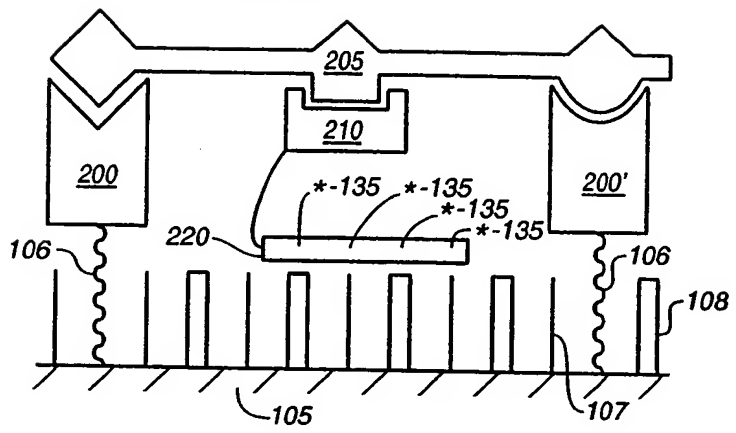
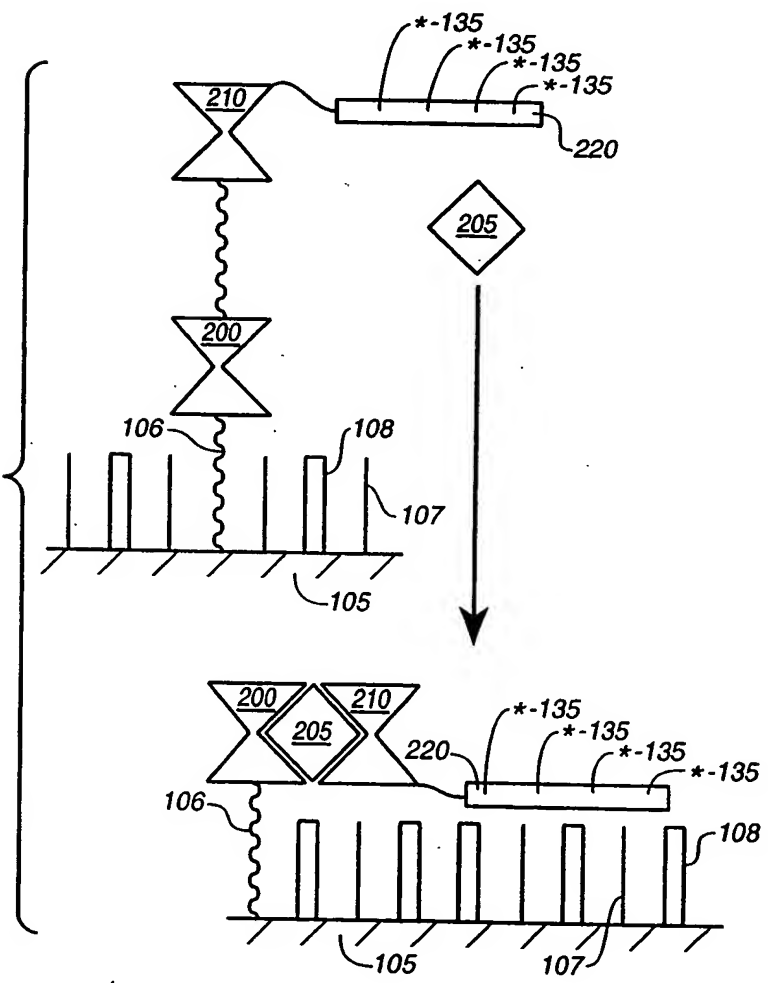


FIG._6F



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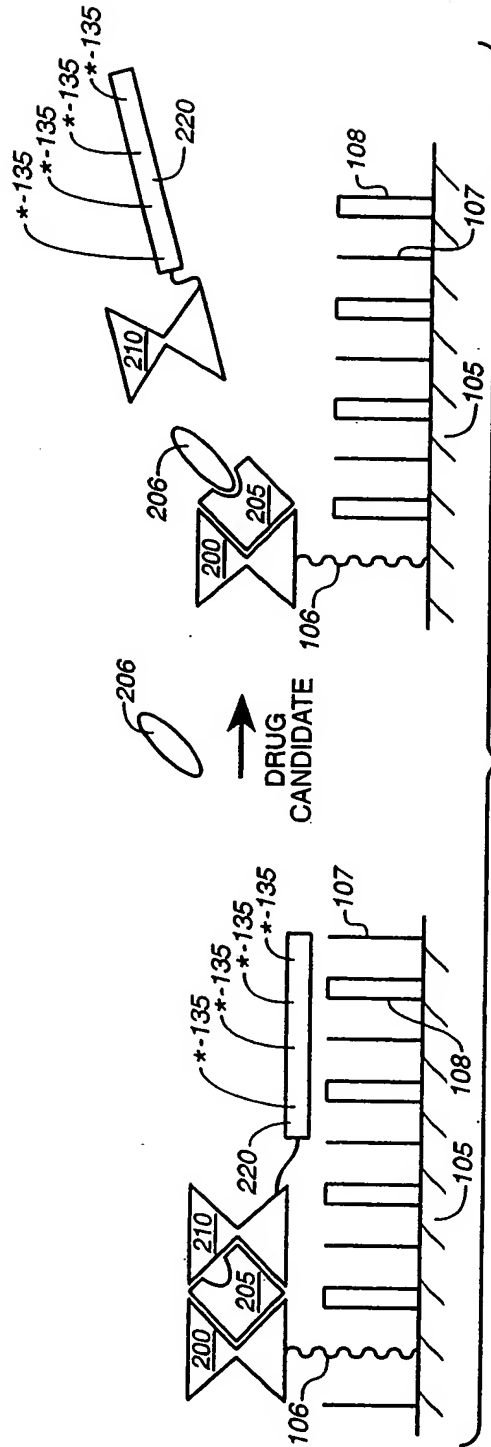
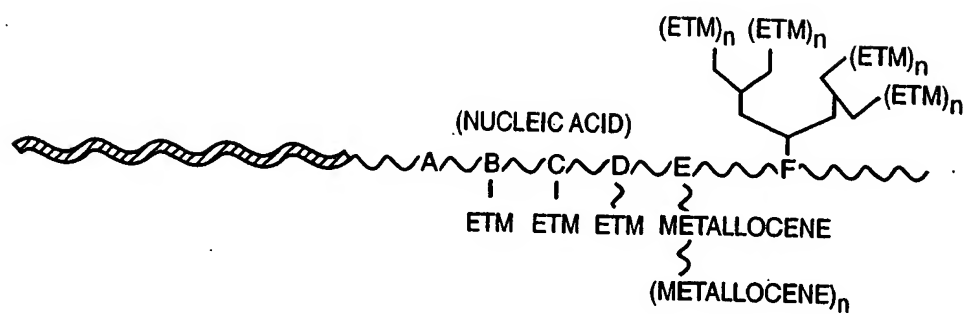


FIG. 6G

ENZYME

 = FIRST HYBRIDIZABLE PORTION OF LABEL PROBE
 = RECRUITMENT LINKER



A = NUCLEOSIDE REPLACEMENT
 B = ATTACHMENT TO A BASE
 C = ATTACHMENT TO A RIBOSE
 D = ATTACHMENT TO A PHOSPHATE

E = METALLOCENE POLYMER, ATTACHED
 TO A RIBOSE, PHOSPHATE, OR BASE
 F = DENDRIMER STRUCTURE, ATTACHED
 VIA A RIBOSE, PHOSPHATE OR BASE

FIG. 7A

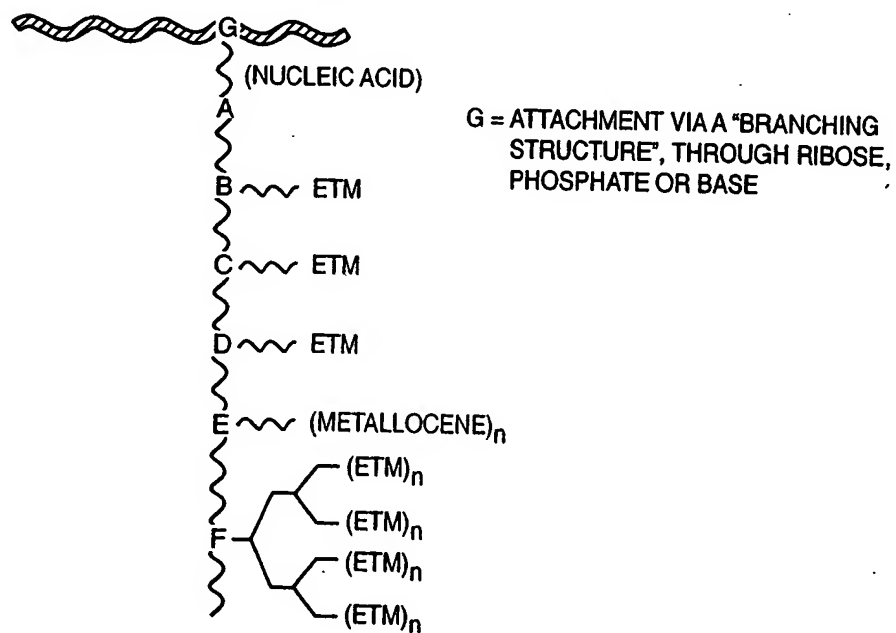


FIG. 7B

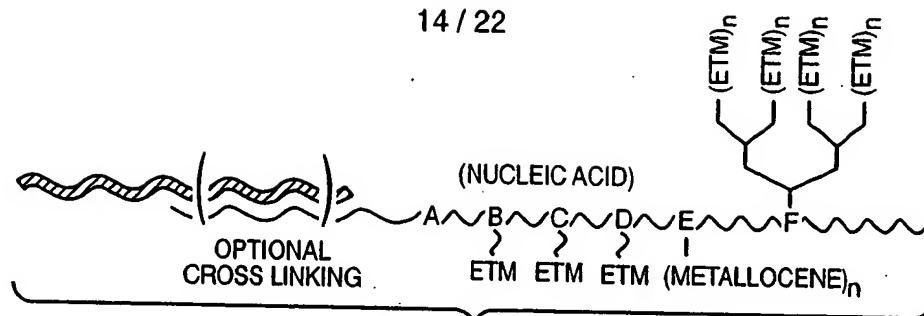
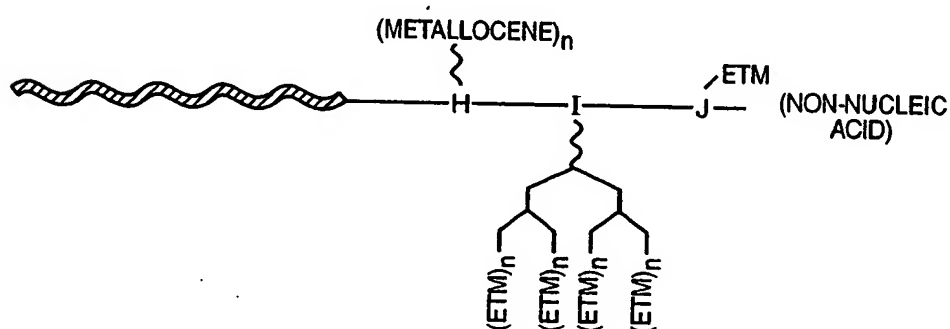


FIG._7C



H = ATTACHMENT OF METALLOCENE POLYMERS
 I = ATTACHMENT VIA DENDRIMER STRUCTURE
 J = ATTACHMENT USING STANDARD LINKERS

FIG._7D

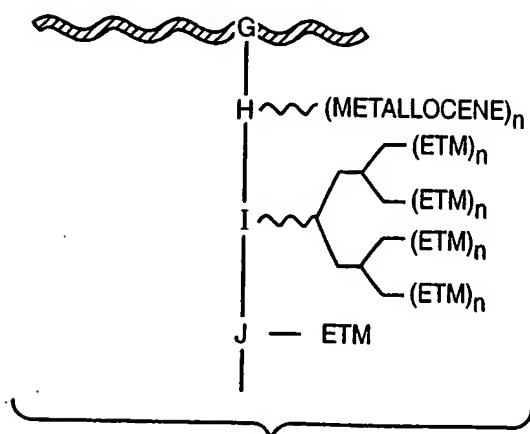
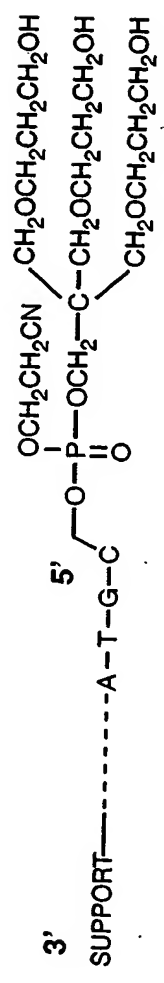
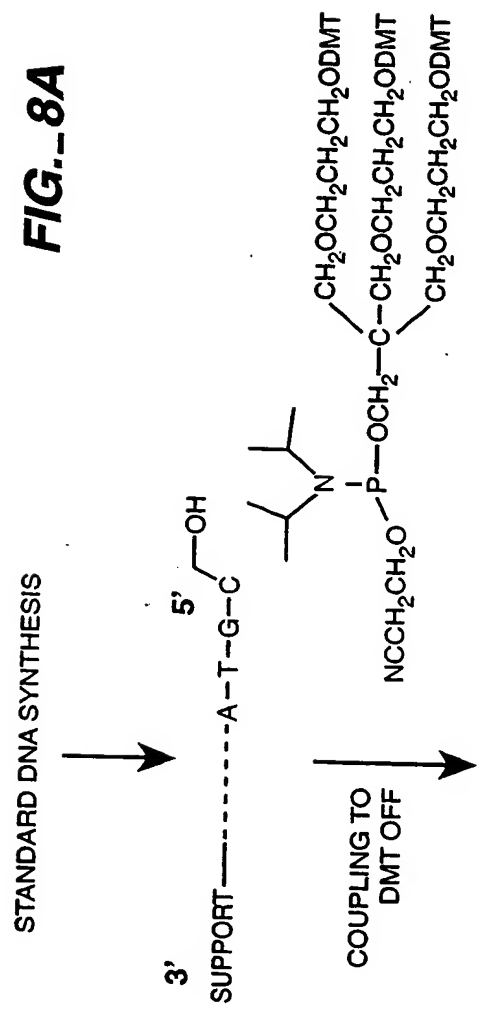


FIG._7E

FIG. 8A

FIG. 8A
FIG. 8B



THIS COUPLING PROCESS CAN BE REPEATED UNTIL DESIRED # OF THE BRANCHING POINTS



FIG. 8B

FIG._9

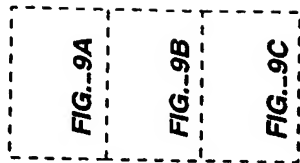
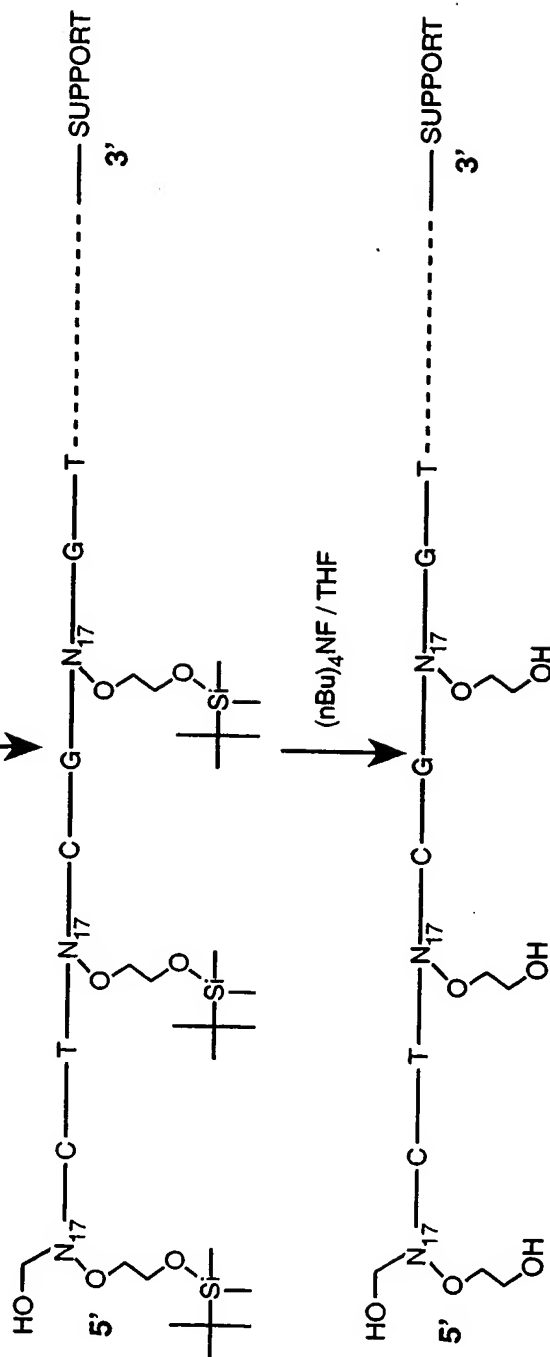
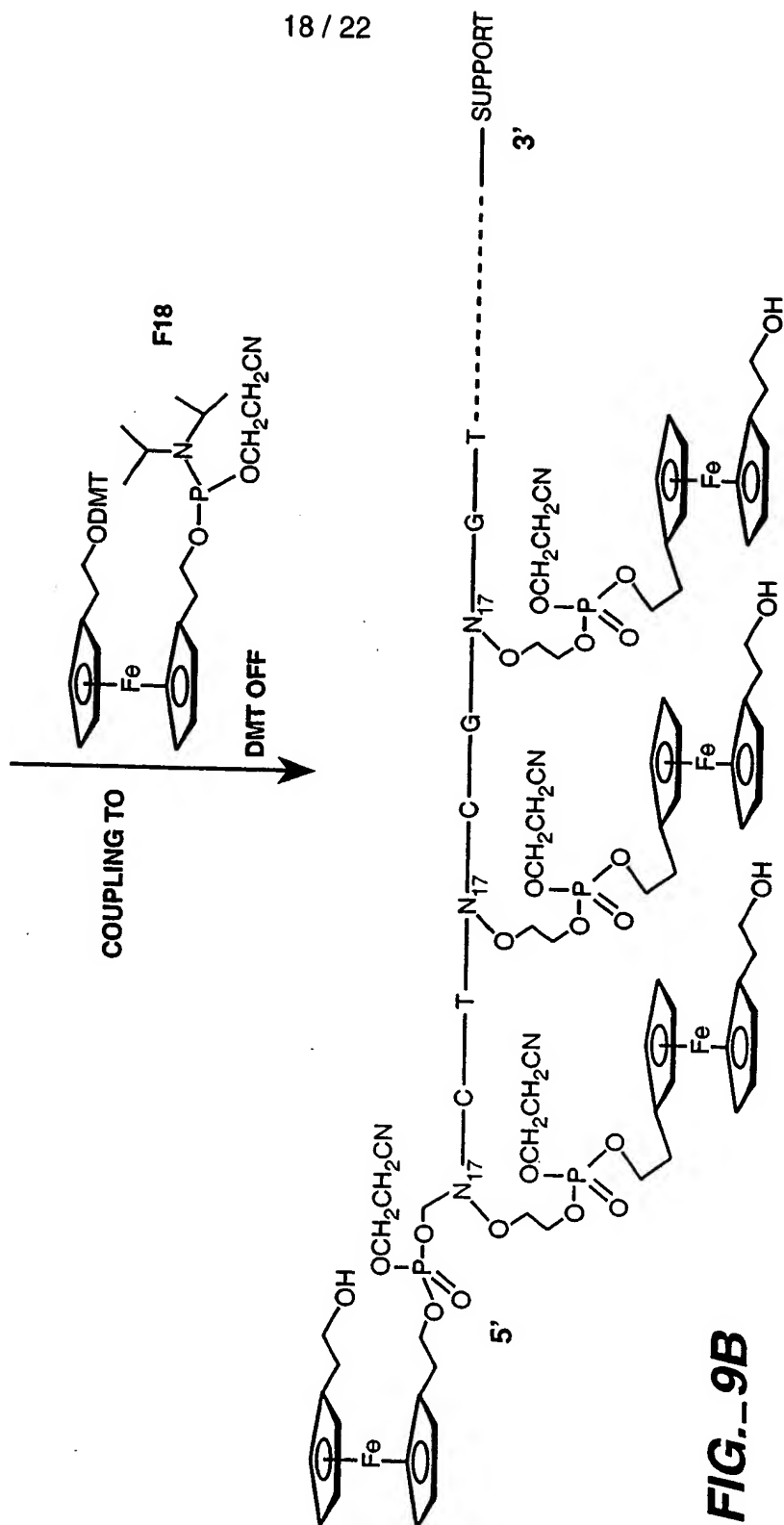
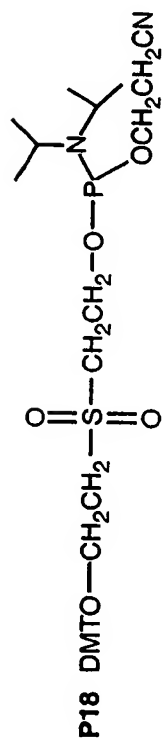


FIG._9A

STANDARD DNA SYNTHESIS USING N₁₇







DMT OFF / CLEAVAGE AND DEPROTECTION

THIS PROCESS CAN BE REPEATED UNTIL THE DESIRED # OF FERROCENE IS OBTAINED, AND THEN HYDROXY GROUPS ON FERROCENE ARE CAPPED USING THE LEFT PHOSPHAMIDITE IN ORDER TO INCREASE THE SOLUBILITY OF FERROCENE IN WATER.

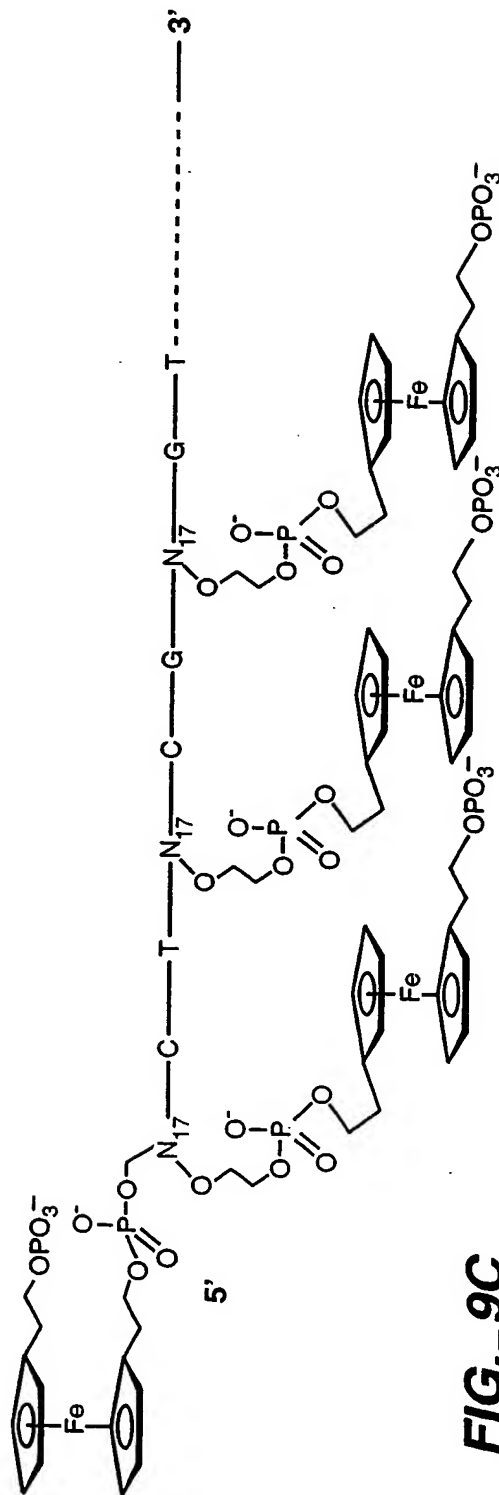
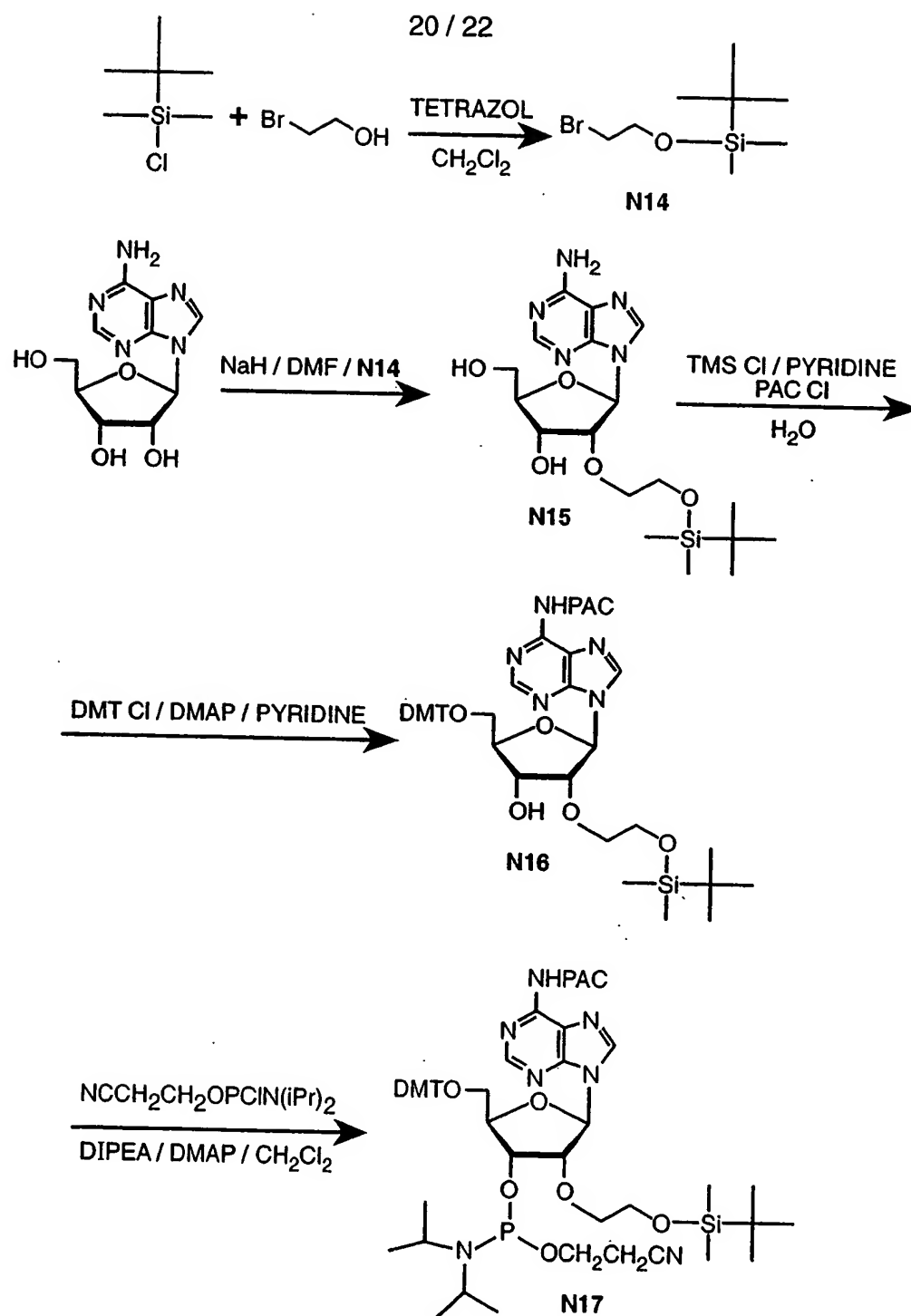


FIG. 9C

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**FIG. 10**

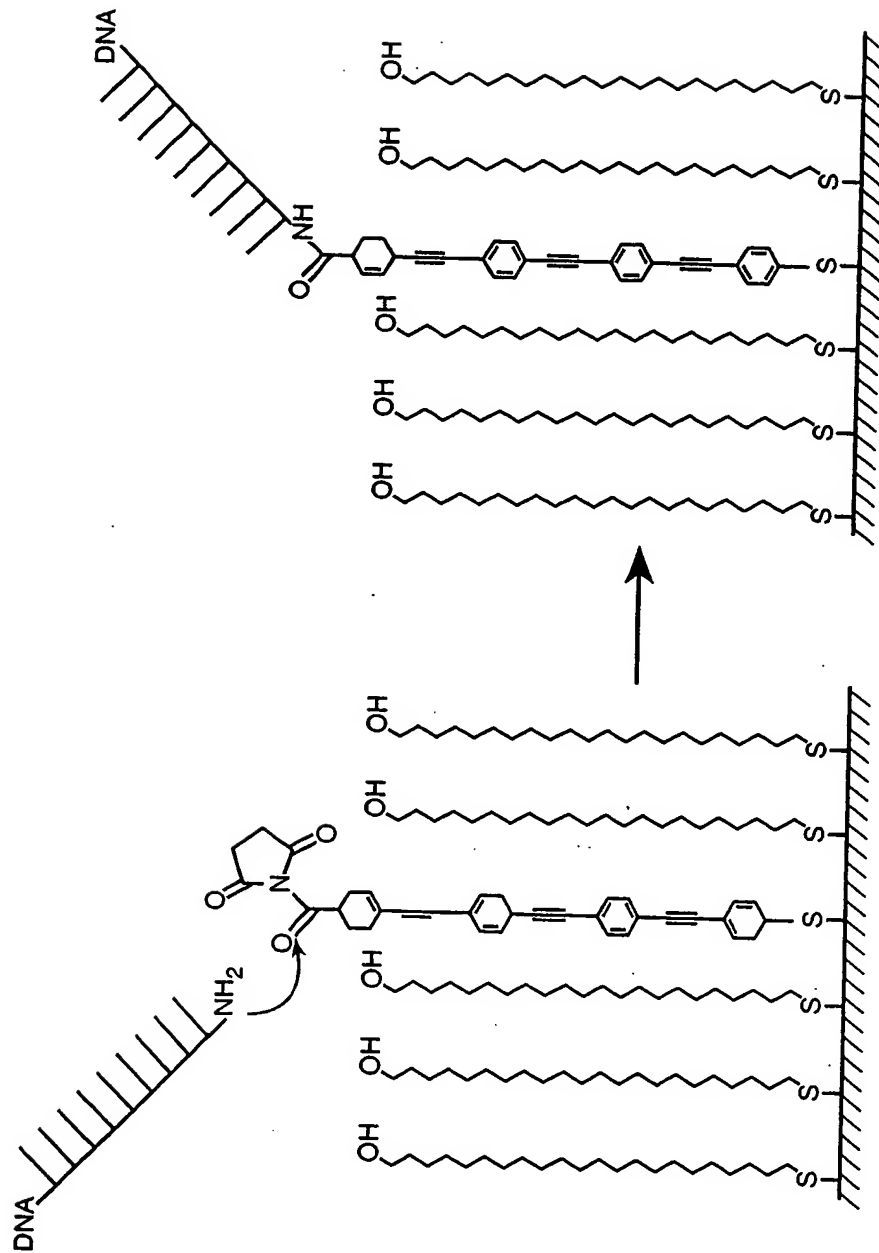


FIG. 11

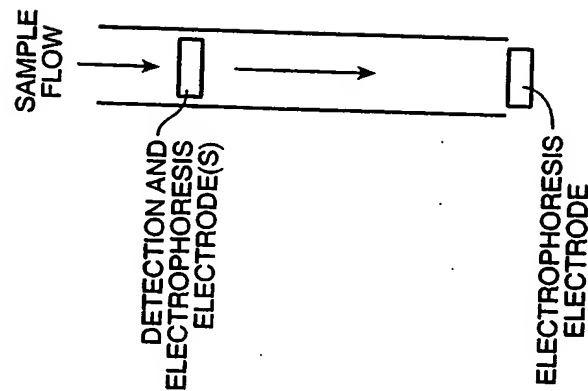


FIG. 13B

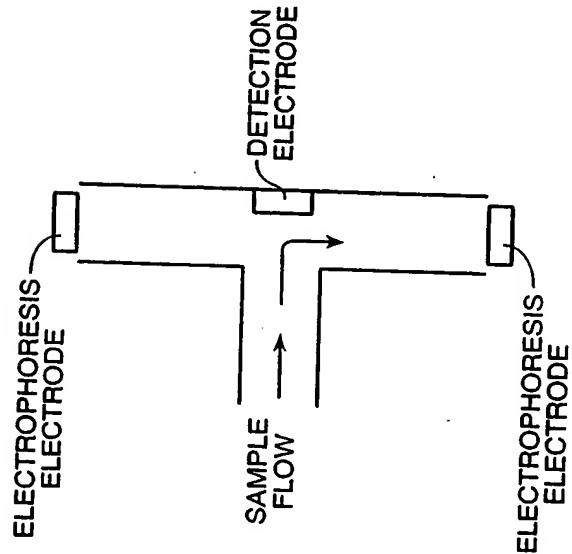


FIG. 13A

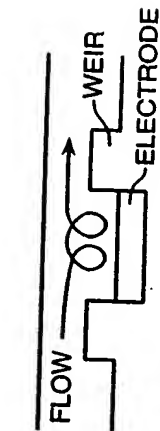


FIG. 13D

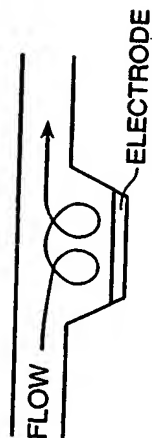


FIG. 13C